MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY
Waste Management and Remediation Division
Waste and Underground Tank Management Bureau
Solid Waste Section
PO Box 200901
Helena, MT 59620-0901

FINAL ENVIRONMENTAL ASSESSMENT

SOLID WASTE SECTION ROLES AND RESPONSIBILITIES

The Department of Environmental Quality's (DEQ), Solid Waste Section (SWS), is responsible for ensuring activities proposed under the Solid Waste Management Act, the Septage Disposal Licensure Act, the Integrated Waste Management Act, and the Motor Vehicle Disposal & Recycling Act are in compliance with current regulations. A land application site must first be approved by the county in which the site is located before the request for approval is submitted to the SWS. Each licensee is responsible for following the Administrative Rules of Montana (ARM) for Cesspool, Septic Tank, and Privy Cleaners, as well as other restrictions and requirements put in place by the county in which the land application site is located.

1. PURPOSE AND NEED FOR ACTION

1.1 SUMMARY

On June 19, 2017, T&D Construction & Excavation (T&D) submitted a new application for a land application site to DEQ for approval. T&D proposes to use 40 acres of the Robert Donat property for the land application of septage, portable toilet waste, and graywater. The site is located near Whitehall in Jefferson County. The land application site was selected solely by the applicant. The purpose of this Environmental Assessment (EA) is to determine if the site meets the requirements of the Septage Disposal and Licensure Laws (SDLL).

1.2 PURPOSE AND NEED

In accordance with 75-1-102, Montana Code Annotated (MCA), the Montana Environmental Policy Act (MEPA) is procedural and requires the "adequate review of state actions in order to ensure that environmental attributes are fully considered by the legislature in enacting laws to fulfill constitutional obligations; and the public is informed of the anticipated impacts in Montana of potential state actions." According to MEPA, EAs are the procedural documents that communicate the process agencies follow in their decision-making. An EA does not result in a certain decision; but rather, it serves to identify the potential effect of a state action within the confines of existing laws and rules governing such proposed activities so that agencies make balanced decisions. The MEPA process does not provide regulatory authority beyond the authority explicitly provided in the existing statute.

The Septage Disposal and Licensure regulations establish the minimum requirements for the land application of septage wastes. The EA is the mechanism that DEQ uses to:

1. Disclose whether a proposed land application site meets the minimum requirements for compliance with current laws and rules;
2. Assist the public in understanding the licensing laws of the Septage Disposal and Licensure program;

3. Identify and discuss the potential environmental effects of the proposed land application activity if it is approved and becomes operational;
4. Discuss actions taken by the applicant and the enforceable measures and conditions of the license designed to mitigate the effects identified by DEQ during the review of the application; and,
5. Seek public input to ensure DEQ has identified all the substantive environmental effects associated with the proposed land application of septage, portable toilet waste, and graywater at the proposed location.

Septage is the liquid and solid material removed from a septic tank, cesspool, portable toilet, or similar treatment works that receives only waste and wastewater from humans or household operations. The land application of septage is an economical and environmentally sound practice. When properly managed, septage is a resource. When used as a soil conditioner, septage contains nutrients that can reduce the reliance on chemical fertilizers for agriculture. A properly managed land application program recognizes the benefits of septage and employs practices to maximize the value of the material. Land application of septage benefits agricultural land by the addition of moisture, organic matter, and nutrients to the soil and does not adversely affect public health. When the septage is being applied as a soil conditioner, the use is considered an application rather than a disposal because the materials in the septage benefit the soil by adding nutrients, moisture, and improving the soil tilth. This will help improve growth of crops or grasses grown on the site.

1.3 PROJECT LOCATION AND STUDY AREA

Robert Donat of T&D (applicant) has submitted an application for DEQ's approval of a new site for the land application of septage, portable toilet waste, and graywater. The site is located on approximately 40 acres of Robert Donat property in Jefferson County. At the present time, the property has native grasses growing throughout. The applicant will use the site as needed for the land application of septage, portable toilet waste, and graywater.

The land application site is located on private property in Section 23, Township 2 North, Range 5 West, Montana Principal Meridian, Jefferson County, Montana (Figure 1.1). As shown in Figure 1.2, the area to be used for land application within Section 23 consists of a 40-acre parcel located in the southern most tract of the Robert Donat Property. Land application is proposed in the Southwest ¼ of the Southwest ¼ of Section 23, Township 2 North, Range 5 West. The 40-acre property will be split into four separate sites, comprised of 10 acres each, that will be rotated annually (Figure 1.3).

The City of Whitehall is located in west central Montana, approximately 26 miles east of the city of Butte, off Interstate 90 (Figure 1.4). Whitehall sits in southern Jefferson County between Big Pipestone Creek and Whitetail Deer Creek. The site is approximately six miles to the north west of Whitehall, off Sheepcamp Road (Figure 1.5). The site sits directly to the east of 14,189 acres of public land owned by the United States Bureau of Land Management. The photographs provided in Figures 1.6 through 1.11 were taken during DEQ's visit of the area proposed for land application.

Figure 1.1: Proposed Land Application Site Location

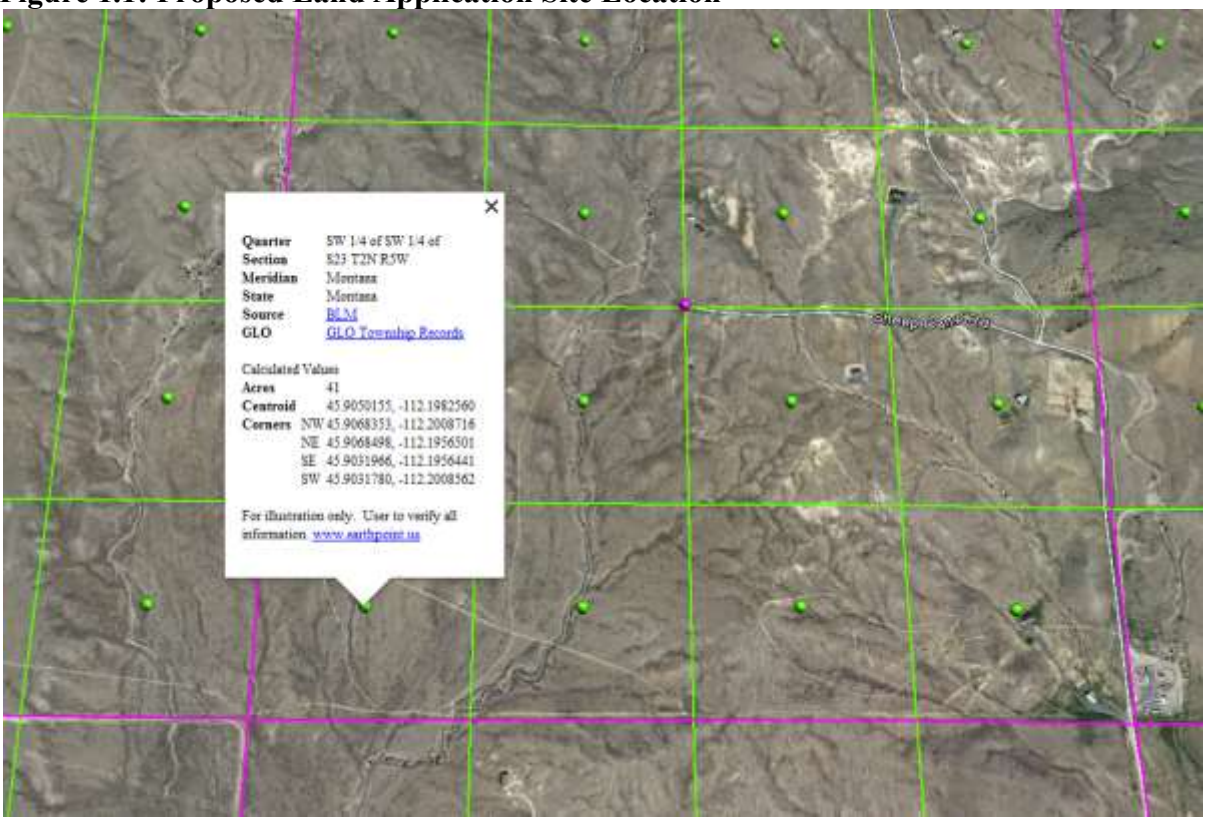


Figure 1.2: Map showing acreage of Proposed Land Application Site.

https://mtdeq.maps.arcgis.com/home/webmap/viewer

Figure 1.3: Map of separate sites within Proposed Land Application Site (sites in Red)

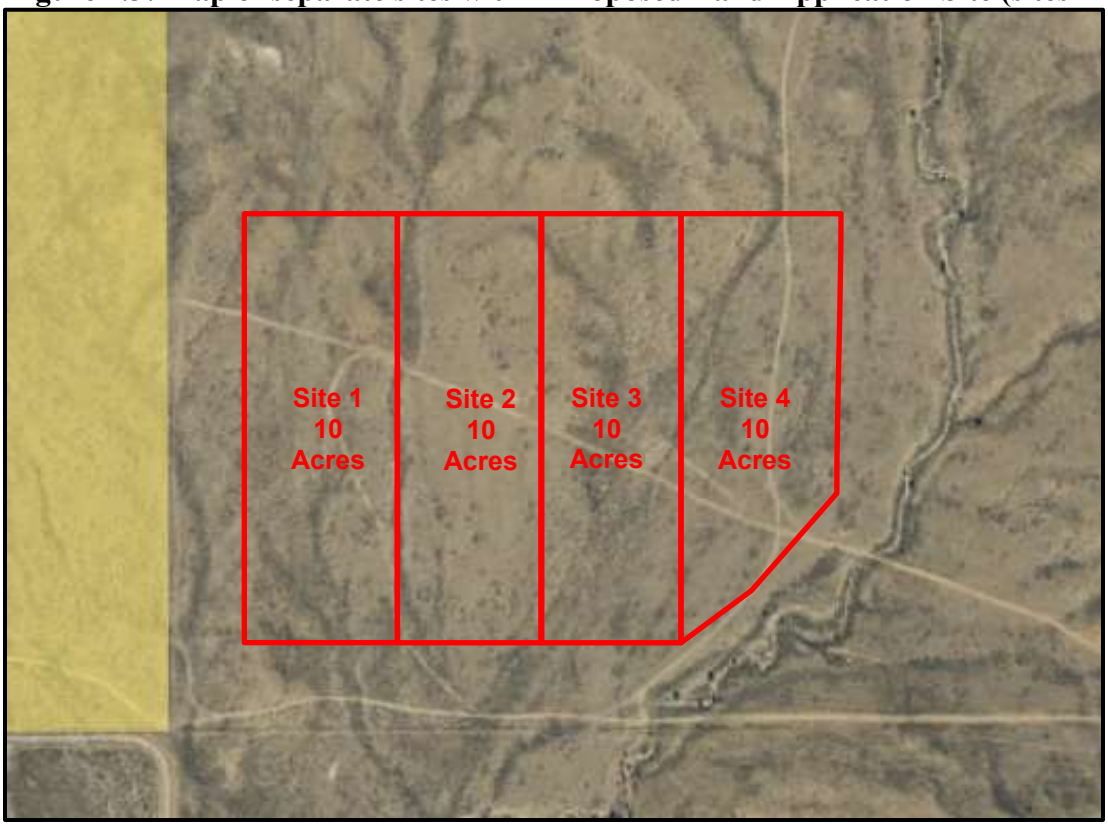


Figure 1.4: Site Location in regards to the State of Montana (Circled in Red)

Figure 1.5: Site location in regards to Whitehall, MT (Circled in Red)

Figure 1.6: Entrance to site facing west (Site in Red)

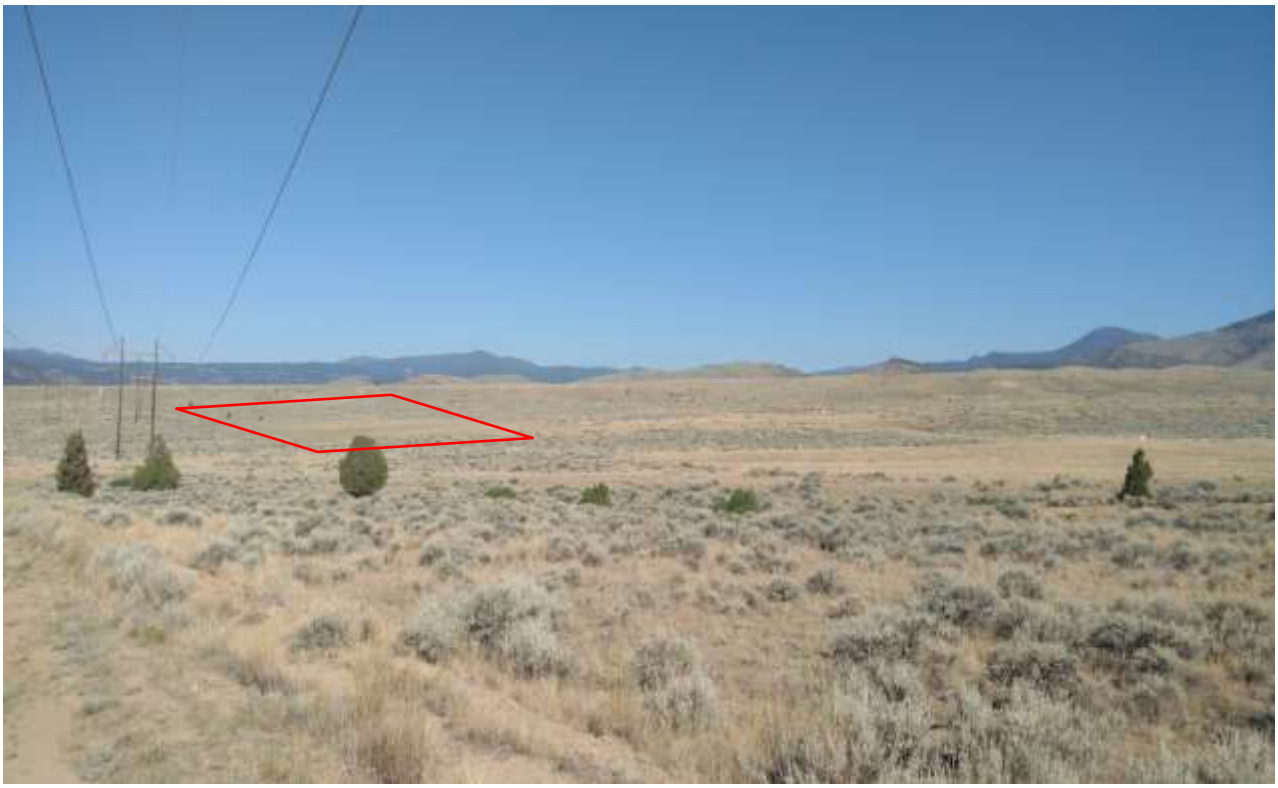


Figure 1.7: Site facing east

Figure 1.8: View to the south of the site

Figure 1.9: View of the site from the south

Figure 1.10: View of the site from the north (Site in Red)

Figure 1.11: View of the site from the north

1.4 REGULATORY RESPONSIBILITIES AND REQUIREMENTS

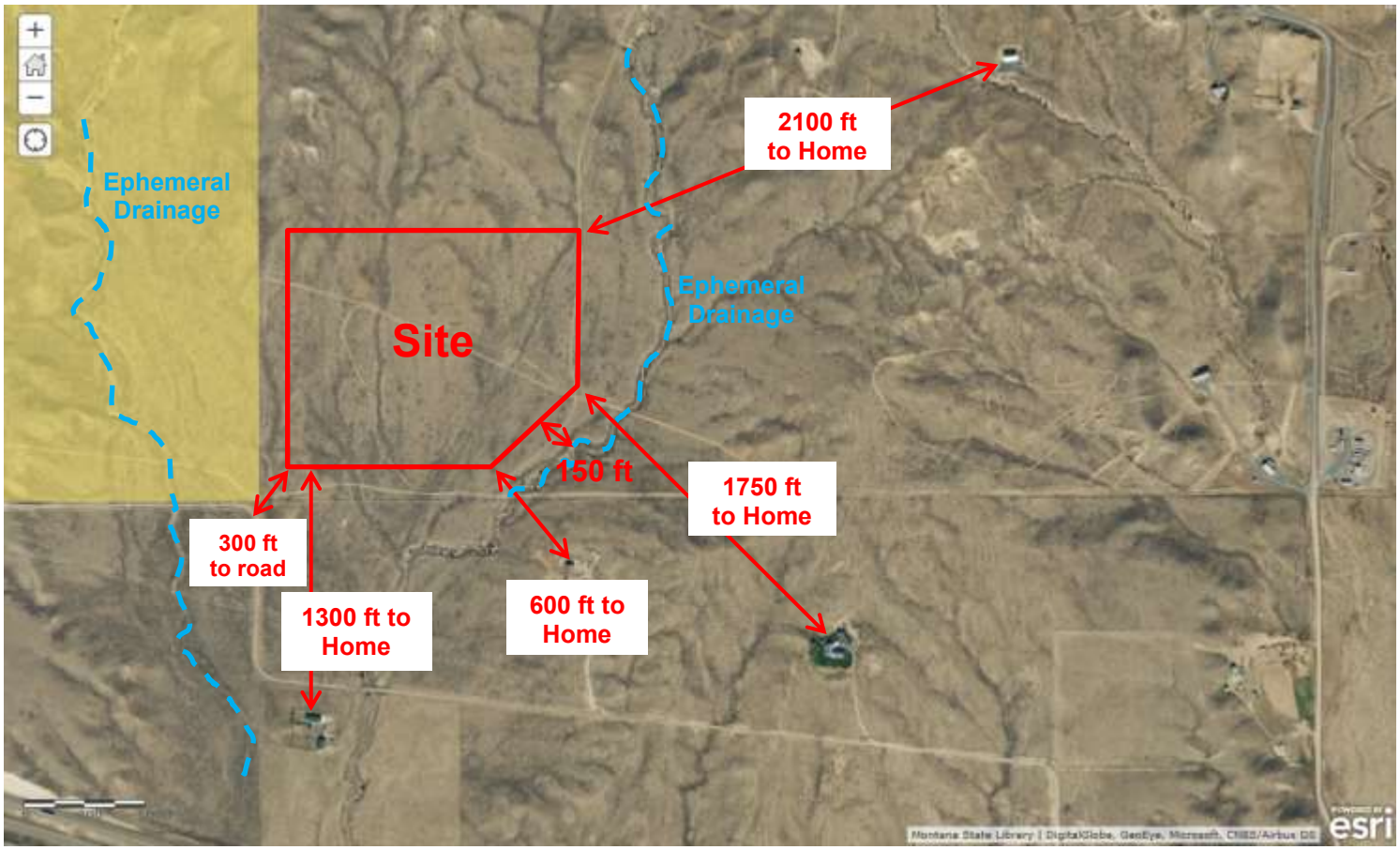
The applicant would maintain the setbacks during all land application activities according to the requirements of ARM 17.50.809. The setback requirements, provided in Table 1.1, prohibit the application of pumpings within 500 feet of an inhabitable building, 150 feet of any state surface water, including wetlands and intermittent drainages, 100 feet of any county-maintained road, and 100 feet of any drinking water source. Land application is also prohibited on slopes greater than 6%, as well as where the seasonally high groundwater is less than six feet below the ground surface.

Table 1.1: Land Application Site Setback Requirements

ARM Reference	Setback Requirements
17.50.809(1)	Pumpings may not be applied to land within 500 feet of any occupied or inhabitable building.
17.50.809(2)	Pumpings may not be applied to land within 150 feet of any state surface water, including ephemeral or intermittent drainages and wetlands.
17.50.809(3)	Pumpings may not be applied to land within 100 feet of any state, federal, county, or city-maintained highway or road.
17.50.809(4)	Pumpings may not be applied to land within 100 feet of a drinking water supply source.
17.50.809(6)	Pumpings may not be applied to land with slopes greater than 6%.
17.50.809(8)	Pumpings may not be applied to land where seasonally high ground water is 6 feet or less below ground surface.

Figure 1.12 provides an aerial view of the land application site that shows the setbacks from nearby homes and from a road located south of the site. The location of the land application site meets setback requirements according to ARM 17.50.809. If homes are constructed in the future that are located within 500 feet of the boundaries of the site, the land application site boundaries will be adjusted to comply with the setback requirements. The ephemeral drainage is indicated in Figure 1.12 in blue. The land application site maintains a 150 foot setback from the drainage. All distances on the map were measured using the ESRI ArcGis program.

Figure 1.12: Site with Setbacks



1.5 PUBLIC INVOLVEMENT

DEQ published the Draft EA on November 10, 2017, beginning a 30-day public comment period. DEQ distributed the Draft EA to adjacent landowners and interested persons and published a notice of document availability in the local newspaper. Copies of the document were sent to the Jefferson County Health Department and the Jefferson County Sanitarian. DEQ received written comments from the public.

2 DESCRIPTIONS OF ALTERNATIVES

2.1 INTRODUCTION

This chapter summarizes alternatives to the proposed plan including the No Action Alternative required by MEPA. MEPA requires the evaluation of reasonable alternatives to the Proposed Action. Reasonable MEPA alternatives are those that are achievable under current technology and are economically feasible as determined solely by the economic viability for similar projects having similar conditions and physical locations and determined without regard to the economic strength of the specific project sponsor.

According to ARM 17.4.609(3)(f), an EA must discuss reasonable alternatives whenever alternatives are reasonable and prudent to consider. DEQ has not included any alternatives to mitigate impacts because T&D's application, and operation and maintenance plan, contain the mitigation necessary to prevent significant impacts. All application documents are considered public record and are available for viewing at any time during normal business hours.

2.1.1 NO ACTION ALTERNATIVE

Under the No Action Alternative, the proposed septage land application site would not be approved by DEQ. Therefore, the land application site could not be used by T&D and disposal of septage would have to occur at another approved location.

2.1.2 PROPOSED ACTION

The Proposed Action is approval of the Robert Donat property for land application.

2.2 LAND APPLICATION SITE OPERATIONS

The land application of septage and graywater is considered the beneficial use of a waste product when the material is applied in accordance with the regulations governing land application. The operational requirements for a land application site, outlined in Table 2.1, include: the removal of all non-putrescible litter within six hours of application; the prohibition of septage application on frozen, flooded, or snow-covered ground if the pumpings may enter state waters; and the application at a rate not exceeding the nitrogen requirement of the grasses grown on site. Pumpings must also be either injected below the land surface, incorporated within six hours of application, or pH adjusted for at least 30 minutes prior to land application.

Table 2.1: Land Application Site Operational Requirements

ARM Reference	Site Restrictions/Requirements
17.50.809(10)	All non-putrescible litter must be removed from the land application site within 6 hours of application.
17.50.809(12)	Pumpings may not be applied at a rate greater than the annual application rate (AAR) of the site for crop nitrogen requirement on an annual basis.
17.50.810(1)	Pumpings may not be applied to flooded, frozen, or snow covered ground if the pumpings may enter state waters.
17.50.811(3)	Pumpings may be applied only if the person first performs one of the following vector attraction and pathogen reduction methods: • injection below the land surface so no significant amount remains on the land surface within one-hour of injection; • incorporation into the soil surface plow layer within 6 hours of application; • addition of alkali material so that the pH is raised to and remains at 12 or higher for a period of at least 30 minutes; or, • management as required by 17.50.810 when the ground is frozen

The sites approved for land application will be rotated on an annual basis, so that a parcel used for land application one year will be inactive the next year. T&D will utilize a four site rotation that will allow grasses to be grown on each parcel for three years before it will be used again as the septage land application site. This rotation allows the vegetation or crop of choice to utilize the nitrogen and other nutrients added from the land application process. In this case, the landowner currently allows for native grasses to be grown on the property. The rules require that vegetation be grown in order to utilize the nitrogen that has been applied during the land application process. All bushes and grasses on the land application site will be removed prior to the initiation of land application activities.

Septage will be land applied using a spreading and screening device to disperse the waste in a wide, thin, even layer at a beneficial rate. The device used by T&D is shown in Figure 2.1. This device will collect the non-putrescible litter in a screen as the septage is dispersed . Non-putrescible litter will be removed from the screen and properly disposed after each application. Septage will be incorporated into the soil surface plow layer with a tractor and tillage equipment within six hours of application. Septage may only be applied on frozen or snow covered ground if no other reasonable treatment method is available. Reasonable treatment method options include hauling the waste to a wastewater treatment plant or to a septage storage, treatment, or dewatering facility that will accept the waste and that is within 25 miles of the point of generation. If application to frozen or snow covered ground is necessary, pumpings may only be land applied on sites that have a slope of less than or equal to 3% that are not within a 100-year floodplain, and when the waste is either alkali-stabilized immediately or incorporated into the soil as soon as the weather permits.

Figure 2.1 Screening and Spreading Device

Land application will occur at a rate not exceeding the Annual Application Rate (AAR) in gallons per acre. For septage and portable toilet waste, the AAR is calculated based upon the production of a specific crop or grass, as follows:

AAR = Crop Nitrogen Requirement/0.0026 for septage waste.
AAR = Crop Nitrogen Requirement/0.0052 for portable toilet waste.

The grass at this location has a nitrogen requirement of 75 pounds/acre; the resulting AAR for septage is 28,846 gallons per acre, and is equal to approximately 1.06 inches of liquid applied per acre per year. For comparison, the average annual precipitation received during the month of September is 1.1 inches, and the annual precitipation in the area is 9.5 inches. T&D estimates that approximately 60,000 gallons of septage and/or graywater and only 1,000 gallons of portable toilet waste will be land applied annually. At least 2.2 acres will be necessary for the estimated annual volume. The proposed land application site will accommodate the proposed volumes and land application activities will not result in an exceedance of the AAR.

Land application will be limited to only the areas approved by DEQ. The boundaries of the approved land application site will be marked with either flags, stakes, or rock cairns to ensure wastes are applied only in the approved areas. The site will not be used until the boundaries have been placed and approved by either DEQ or the local county sanitarian.

3 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES BY RESOURCE

3.1 LOCATION DESCRIPTION AND STUDY AREA

The project location and associated study area for the Proposed Action include all lands and resources in the proposed Project Area, plus those additional areas identified by technical disciplines as "resource analysis areas" that are beyond the Project Area. Resource analysis areas are identified for each technical discipline.

3.2 TERRESTRIAL AND AQUATIC LIFE AND HABITATS

The analysis area for wildlife is the proposed site boundary of 40 acres on the Robert Donat Property. The analysis methods included DEQ's research of the Montana Natural Heritage Program database to determine the presence of threatened, listed, and/or endangered plant and animal species. DEQ also walked the site to observe the resources, habitats, land uses, and species present. The following analysis provides a habitat-based approach to determine effects of land application activities at the proposed site on listed species.

The proposed land application site is located in the Rocky Mountain Lower Montane, Foothill, and Valley Grassland ecosystem of west central Montana. These systems are present in the gentle topography, fine soils, and mountain slopes of the Whitehall area. The project area is covered by extensive foothill and valley grasslands with bunch grasses and forbs and sparse shrub cover including mountain big and silver sagebrush.

The proposed 40-acre site is located within a Sage Grouse general habitat area. The proposed site is located in the southwest corner of an Executive Order Sage Grouse Habitat that runs along the eastern border of the Deerlodge National Forest from Interstate 90 in the south to the Bull Mountain Game range in the north. A search of the Montana Natural Heritage Program found records for Township 2 North and Range 5 West to contain seven species of concern and zero special status species. A search of the U.S. Fish and Wildlife Service (USFWS) listing of endangered, threatened, proposed, and candidate species in Montana revealed the presence of one candidate, one proposed threatened, two threatened and two recovery species.

The search of the USFWS for Jefferson County listed the recovery species as the Bald Eagle and the Gray Wolf. The candidate species is the Whitebark Pine. The proposed threatened species listed was the North American Wolverine and the threatened species were the Ute Ladies-Tresses and the Canada Lynx.

The search of the Montana Natural Heritage Program indicated the Evening Grosbeak, Cassin's Finch, Clark's Nutcracker, Sage Thrasher, Green-tailed Towhee, and Brewers Sparrow as avian species of concern in the Township and Range of the projected site location, a 36-square mile area. The Plain's Spadefoot was the only listed amphibian of concern.

Designation as a species of concern is not a statutory or regulatory classification. Instead, these designations provide a basis for resource managers and decision makers to make proactive decisions regarding species conservation. As a result of the limited development and lack of human population in the area, there remains adequate acreage of similar habitat available in the vicinity of the proposed site to accommodate any species that would have been forced to relocate due to the current activities.

There are no wetlands or permanent surface water bodies located on the proposed site. Because no continuously active aquatic systems exist within the boundary of the proposed site, it is unlikely that there is any significant aquatic life or habitat anywhere on the site and therefore no impacts. By maintaining the required setbacks of 150 feet, as shown in Figure 1.12, the impacts to water bodies are mitigated.

The site is located in a General Habitat Area for sage grouse. A request for consulation and review was submitted to the Montana Sage Grouse Habitat Conservation Program (MSGHCP) by the applicant. Executive Orders 12-2015 and 21-2015 are set forth by Montana's Sage Grouse Conservation Strategy to maintain viable sage grouse populations and conserve habitat to avoid the listing of the sage grouse as an endangered species. The project was proposed to land apply septage as a fertilizer to enhance the growth of grasses in the project area after sagebrush has been removed. The treatment area is recognized to be accessed by an existing road and no construction will occur. Based on the information provided by the Montana Sage Grouse Habitat Conservation Program, the project location is not within two miles of an active sage grouse lek. MSGHCP recommended that weed management be required within the 40-acre parcel due to its location within the General Habitat area for sage grouse. Therefore, T&D must adhere to the MSGHCP's weed management requirements and must control noxious weeds and invasive plant species, including cheatgrass and Japanese brome.

The applicant would utilize a total of 40 acres for land application activities, but only use one 10-acre parcel per year. Land application sites would be rotated every year, so each 10-acre parcel would be used every fourth year. There is no unique or designated vegetation or habitat on the proposed site. Adequate sagebrush habitat exists outside the vicinity of the site and, as noted above, the site is not located within two miles of an active lek. Thus, land application activities will not affect the sage grouse's foraging or nesting patterns. Therefore, the proposed land application site would have no effect on the greater sage grouse.

The proposed site location is located in a largely undeveloped area that is dominated by grassland and sage brush fields. The applicant has 360 more acres of similar habitat to the north and east with more foothills in the northern region. The 10-acre parcels within the proposed 40 acre site will be rotated annually, allowing the natural vegetation to grow for three years before that site would be used again for land application.

The quantity and quality of the vegetative cover will be enhanced by the proposed land application activities. When properly managed, septage is a resource that is used as a valuable soil conditioner which contains moisture and nutrients. This can reduce reliance on chemical fertilizers for agriculture. A good land application program recognizes the potential benefits of septage and employs practices to maximize these benefits. The land application of septage, portable toilet waste, grease trap waste, and graywater at this site will have a positive impact on the site from the addition of nutrients and moisture. The organic matter added from the proposed activity will also improve the soil tilth for the continued production and enhancement of the native grasses.

3.3 HYDROLOGY

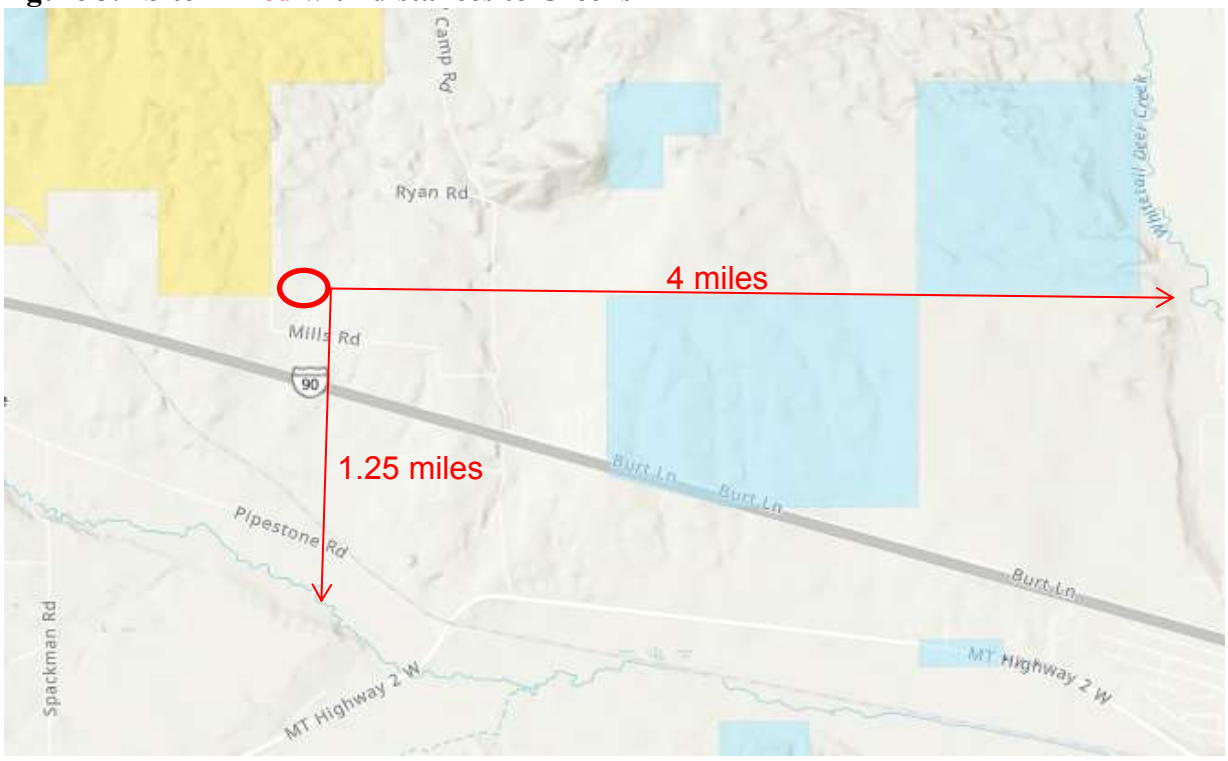
The analysis area for hydrology is the proposed 40-acre land application site. Some discussion of regional geology, based upon published reports, is also provided. The analysis methods for hydrology included reviewing wetlands and jurisdictional waters information, on-site drilling reports, publications of the Montana Bureau of Mines and Geology, and published topographic maps of the area. DEQ also conducted a site visit to identify drainages and any other topographical features that may be places of concern for the land application activites.

3.3.1 Surface Water

The proposed land application site is located in west central Montana northwest of the City of Whitehall. Whitehall is located in what is considered the Missouri and Jefferson Headwaters. The main drainages in the vicinity of the project are Whitetail Deer Creek and Pipestone Creek. Both creeks form to the north and west of the site and drain to the southeast to the larger Jefferson and Missouri Rivers. The landscape of the proposed site generally slopes to the south with larger foothills to the north.Whitetail Deer Creek is 4 miles to the east and Pipestone Creek is 1.25 miles to the south (Figure 3.1). There are no seasonal drainages or ephemeral ponding areas within the proposed site location. The are two ephemeral drainages located to the east and west of the site, but are beyond the 150-foot setback for distance to surface water.

There is one ephemeral drainage that borders the land application site to the southeast, but falls outside of the 150-foot setback. While satellite images show no other drainages forming or occurring within the site in the past 20 years, these channels have been known to reform or migrate. If any ephemeral surface waters form within the site, the pumper will maintain the required 150-foot setback from these areas. The septage will be screened and land applied using a dispersive mechanism so that wastes are applied in a thin, wide stream. All waste will be incorporated within six hours of application to ensure there are no impacts to surface water.

Figure 3.1 Site in Red with distances to Creeks



3.3.2 Groundwater

Groundwater underlying the Whitehall area is located in Quaternary gravel and upper Tertiary sediments. These glacial, lake, and alluvium deposits consist mainly of siltstone, mudstone, claystone, and sandstone with some conglomerate and breccia. Groundwater in these deposits occurs under both confined and unconfined conditions.

The Montana Bureau of Mines and Geology, Groundwater Information Center (GWIC) is the DEQ's reference for well data in Montana. All wells that are documented with GWIC were taken into account when this EA was written. Any well that is not documented in GWIC has not been included in this assessment, but if wells are proven to be within setbacks, the setbacks will still be maintained and the site boundaries adjusted.

The GWIC database locates wells by section and identified five wells in Section 23. Section 26, located directly south of the proposed land application site, contains fourteen wells according to GWIC. For an understanding of the area, DEQ reviewed information from the five wells located nearest the proposed land application site in Section 23 and the nearest well in Section 26 (Figure 3.2).

Table 3.1 summarizes the well information for the wells that were identified within the vicinity of the proposed land application site. Because the data in GWIC is based on well drillers' records, the details are not field verified for accuracy. Further, the GWIC database contains well information only for those drilling records that have been submitted; there may be additional wells in the area that are not contained in the database because the records have not been submitted to GWIC. Therefore, this analysis is based only on information contained in the GWIC database.

According to the GWIC database, groundwater is located in this area at an average elevation of 4,617 feet above sea level. This is determined by calculating the elevation of the static water level (SWL) of the five wells used in this analysis that are located nearest the proposed site within Sections 23 and 26. The proposed site location sits at 4,750 feet above sea level. Therefore, the average thickness of the unsaturated glacial, lake, and alluvium deposits that overlie the local groundwater aquifer is approximately 133 feet.

Figure 3.2: Location of Documented Water Supply wells within 0.5 miles
(Site application boundary outlined in red, wells in blue circles, well # in black)

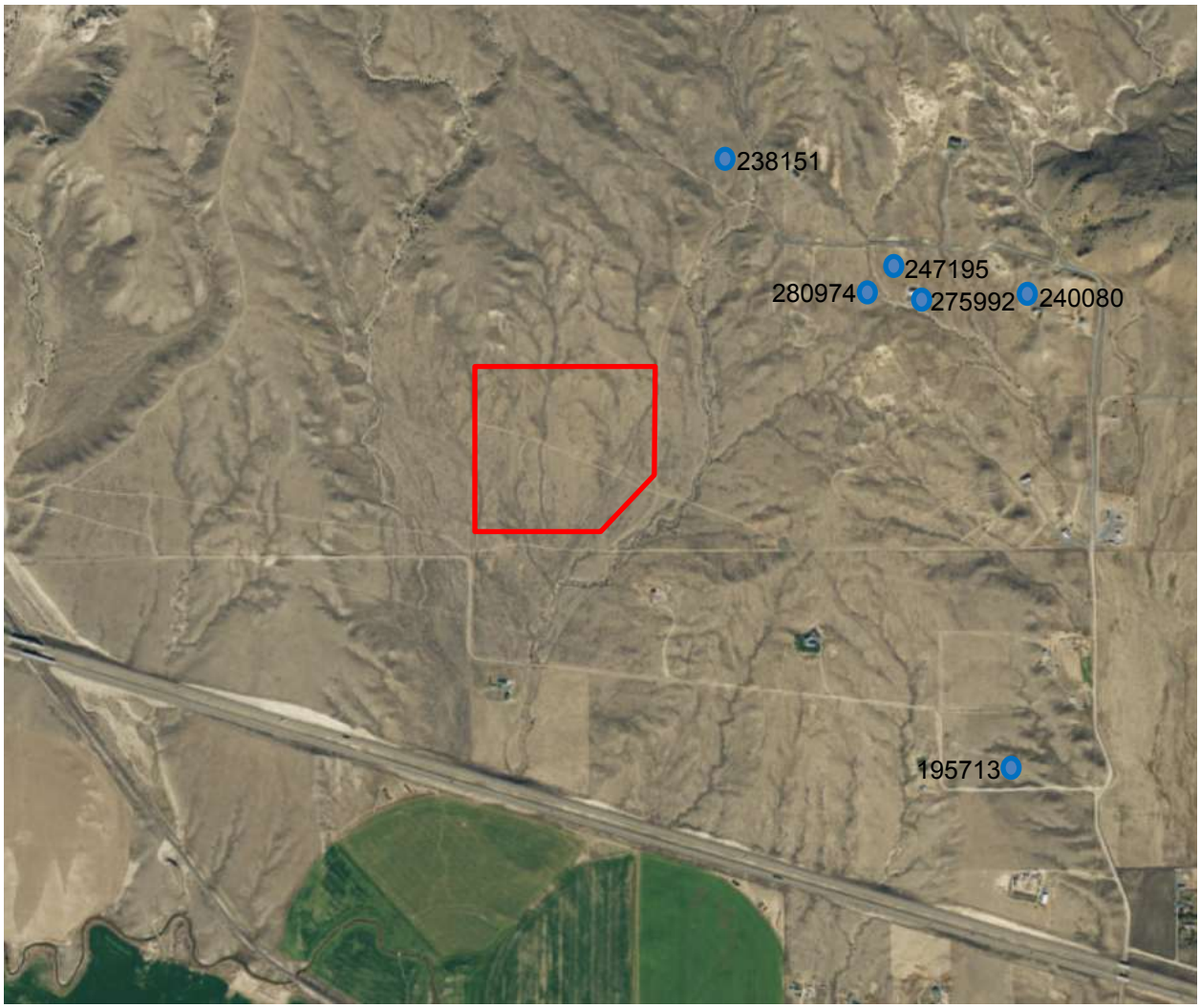


Table 3.1: Summary of Nearby Wells

Township	Range	Section	Well Number	Total Depth	Static Water Level	Date Drilled	Use
2N	5W	23	238151	236	123	4/26/2007	Domestic
2N	5W	23	240080	270	145	8/20/2007	Domestic
2N	5W	23	280974	220	100	12/11/2014	Domestic
2N	5W	23	247195	500	154	8/12/2008	Domestic
2N	5W	23	275992	350	146	11/15/2013	Domestic
2N	5W	26	195713	330	170	2/1/2002	Domestic

(Source: Montana Bureau of Mines and Geology, Ground Water Information Center) The total depth column is the depth drilled, which may be deeper than the bottom of the well as completed. Static water level is the level of water measured in the well at the time of installation. All data is based upon the driller's logs and may not be reported for every well.

Groundwater in the local area is encountered approximately 133 feet below surface level. The requirement for a land application site is that the seasonal high depth to groundwater is 6 feet or greater below ground surface. The shallowest SWL is well #280974 at 100 feet deep. The land application activities should have no impact on the groundwater in the area due to its depth below ground surface.

Septage will be land applied in a wide, thin, even layer at a rate not exceeding the AAR, and will be incorporated into the soil surface plow layer within six hours of application. Pumpings must also not be applied within 100-ft of a drinking water source. The nearest documented well to the proposed land application site is 1,930 feet to the northeast. All wells in the nearby location have reported static water levels greater than 6 feet below ground surface (ARM 17.50.809(8)).. If any wells are drilled within the 100-foot setback, the boundaries of the land application site will adjusted to maintain the proper setbacks. There are no anticipated impacts to groundwater or groundwater supply wells as a result of the proposed land application activities.

3.4 GEOLOGY AND SOILS

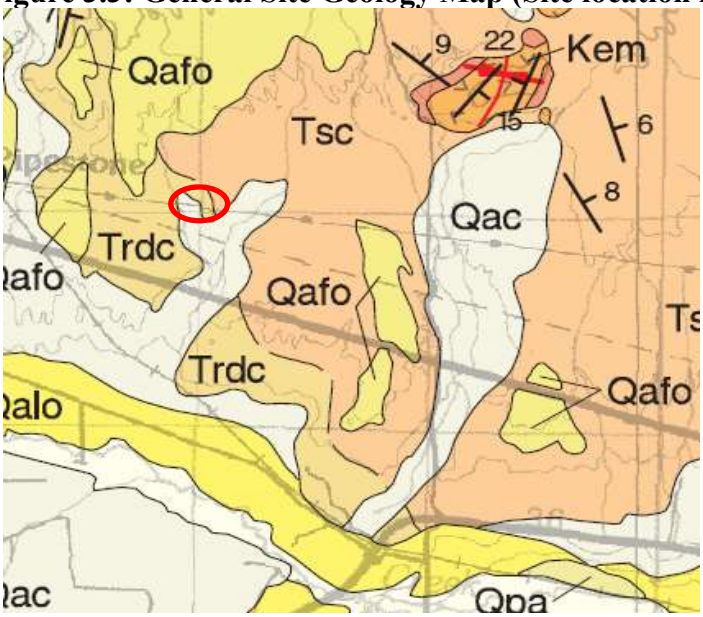
The analysis area for geology is the proposed 40-acre land application site. A discussion of regional geology, based upon published reports, is also provided herein. The analysis methods for geology included reviewing on-site drilling information, publications of the Montana Bureau of Mines and Geology, the U.S. Geological Survey, and the U.S. Department of Agriculture's Natural Resource Conservation Service, along with their associated geology and soil maps and drawings. A site visit was also conducted by DEQ to better analyze the soils of the site.

The proposed land application site is located in west central Montana, north and west of the City of Whitehall. The Elkhorn Mountains formed by volcanics are situated north of the proposed location; the Boulder Batholith is situated towards the west. Most of the geologic deposits near the site are Quaternary sediments from the sloped areas of the region onto the valley. Much of the sediments covering the site were deposited from channels and floodplains of modern rivers and streams. The underlying strata includes

siltstone, mudstone, claystone, and sandstone with some conglomerate and breccia. Other gravel deposits can be dated back to the Pleistocene Epoch and is composed of subangular to subrounded clasts of quartzite and granitic rocks from the Elkhorn Mountain Volcanics.

Soil types in the proposed land application site include Kalsted sandy loam and Sappington clay loam. The Sappington clay loam, formed on alluvial fans, hillsides, knolls, and plains, covers 85% of the site. It is a very well drained soil with no frequencies of flooding or ponding. The soil can typically drain 0.57 to 1.98 inches of water per hour and is generally located in climates that average 10-14 inches per year. The Sappington clay loam consists of eight inches of clay loam that sits atop five feet of loam. The remainder of the proposed site is covered by the Kalsted sandy loam which is formed from alluvium and slope alluvium. The Kalsted sandy loam is classified as a well drained soil with no frequencies of ponding or flooding. This soil can drain 2.13 to 7.09 inches of water per hour and is considered prime farm land if irrigated. The top 21 inches is composed of a sandy loam with the remaining five feet being a sandy, gravelly loam.

Figure 3.3: General Site Geology Map (Site location is in Red)



Qafo	**Alluvial fan deposits**
Tsc	**Sixmile Creek Formation**
Trdc	**Renova Formation, Dunbar Creek Member**

Source:Montana Bureau of Mines and Geology, Geologic map, Butte South 30'x60' Quadrangle,2012.

The alluvium deposits have resulted in soils that will be affected positively by the proposed land application activities. The clay loam and sandy loams of the area would result in the infiltration and storage of moisture applied through the land application process. The speader bar will apply a thin, even layer the septage to the soil and the loams will absorb the moisture quickly in its dry climate. In addition, septage will be incorporated within six hours of application. Septage land application activities will provide the moisture, nutrients, and tilth needed to increase the production of native grasses on the site. Land application activities should have a positive impact on soils at the proposed site.

3.5 CLIMATE

The analysis area for climate is the site of the proposed 40-acre land application site. The analysis methods for climate included a site visit to the proposed land application site as well as data composed by weatherbase.com for Whitehall, Montana. Climate data was comprised of averages based on recordings at Whitehall over the past 22 years.

The climate in the area for the proposed land application site is typical of the low altitude, semi-arid steppe region in the Whitehall area. The tables below provide a summary of monthly climate information. The winters in the Whitehall area are long and moderately snowy; the summers are hot and dry. The average annual precipitation is approximately 9.5 inches. The majority of precipitation falls during the months of April through September, while November and February are the driest months. The hottest month of the year is July and the coolest is January. Table 3.2 shows averages for temperature and precipitation in the Whitehall area.

Table 3.2 Temperature and Precipitation in Whitehall, Montana

TEMPERATURE

Average Temperature — Years on Record: 22

	ANNUAL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
F	43.6	20.9	25.9	31.3	43	51.5	57.6	66.7	65.4	55.4	45.8	32.8	26.6

Average High Temperature — Years on Record: 22

	ANNUAL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
F	57.2	32.2	37.2	43.2	56.5	65.4	71.5	84.1	83.2	71.4	60.1	44.1	37.2

Average Low Temperature — Years on Record: 22

	ANNUAL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
F	29.9	9.6	14.5	19.4	29.5	37.7	43.8	49.3	47.5	39.5	31.4	21.4	16

PRECIPITATION

Average Precipitation — Years on Record: 22

	ANNUAL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
in	9.5	0.3	0.2	0.5	0.8	1.8	2	0.9	0.8	1.1	0.5	0.2	0.3

Average Number of Days With Precipitation — Years on Record: 22

	ANNUAL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Days	80	5	4	7	7	11	12	8	7	6	5	4	4

Source: www.weatherbase.com

Net evaporation rates were also accessed from the Western Regional Climate Center to ensure the proposed site could utilize the increase in moisture to the land. The net evaporation rates for central Montana ranges from 31 inches per year (in/yr) in Dillon, to 35 in/yr at Canyon Ferry Dam, to 40 in/yr in West Bozeman. This average of 35 in/yr demonstrates that the soils

have significant capacity for extra moisture outside of the annual precipitation rate of 9.5 inches.

Due to the extremely dry climate, the low average annual precipitation, and the high evaporation rate, the proposed land application site will have a positive impact on the environment of the site. The dry and hot months of July, August, and September correlate well to the busy seasons of the average Montana septic tank pumper business. Dry soils and vegetation will welcome the increase in moisture from septage land application activities and will help the site vegetation to flourish.

3.6 AESTHETICS

This proposed land application site is located within an 80-acre parcel of the landowners property with no development, farming, or grazing activities taking place. The 80 acres is in addition to 240 acres owned by the landowner which sits to the north and east of the proposed land application site. It is not located on a prominent topographical feature, nor is it visible from a highly populated area, although there are homes located to the south of the parcel. The application of septage is similar to the day to day activities of farming and ranching in the area and will not cause a change in the overall aesthetics of the area.

The land application site is not deemed a public nuisance. According to Montana Code Annotated (MCA), Section 27-30-101, a public nuisance is defined as: *(1) Anything that is injurious to health, indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property, or that unlawfully obstructs the free passage or use, in the customary manner, of any navigable lake, river, bay, stream, canal, or basin or any public park, square, street, or highway is a nuisance. (2) Nothing that is done or maintained under the express authority of a statue may be deemed a public or private nuisance*. The Department of Environmental Quality (DEQ) authorizes and regulates these activities through licensure and the activity is therefore not a public nuisance.

Odors will be minimized with proper site management. While the presence of odors may be detectable during the land application activity, these odors are typically only detectable within close proximity of the site activity. The natural soil bacteria use the carbon in the waste as a fuel source. This activity results in the breakdown of wastes, including odors. Winds are typical in the Whitehall area and will also disperse odors resulting from land application activities quickly. Although DEQ does not regulate odors, the presence of odors outside the land application area could mean that wastes have been over-applied or not incorporated as required. DEQ and/or the local county sanitarian would respond to odor complaints to determine if wastes have not been properly managed. There are no anticipated additional impacts to the aesthetics as a result of the land application activities.

3.7 HUMAN HEALTH & SAFETY

The septage, portable toilet waste, and graywater will be land applied at the site using a screen and dispersive mechanism. The dispersive mechanism applies the waste in a wide, thin, even layer at a beneficial rate. Septage will be incorporated into the soil surface plow layer with a tractor and tillage equipment within six hours of application.

The land application area is located on private property. Public access into the site is

controlled by multi-strand barbed wire fence. The site will be gated at the eastern entrance and property corners will have no trespassing signs posted. There are no additional human health and safety concerns when the site is operated in accordance with the Septage Disposal regulations. Therefore, there are no additional impacts on human health and safety anticipated as a result of land application activities.

3.9. DEMAND FOR GOVERNMENT SERVICES

The Jefferson County County Sanitarian and DEQ Solid Waste Section will conduct periodic inspections of land application activities at the site. Volumes of waste applied at the site from the land application process will also be monitored by DEQ to ensure that the AAR is not exceeded. Site inspections are a common, regular activity DEQ performs for all solid waste and septic tank pumper locations. Therefore, there is a minor impact to the demand for government services.

3.10 TRAFFIC

The proposed land application site will be accessed off of Sheep Camp Road, a road on the north side of Old US Highway 10. Sheep Camp Road currently supports traffic to rural homes, farms, and ranches; including heavy equipment associated with the current agricultural activities in the area. Once off Sheep Camp Road, the site access road is private and will be maintained by the applicant. There are no impacts anticipated to traffic as a result of the proposed land application activities as there will not be a significant increase of traffic on Sheep Camp Road.

4. CONCLUSIONS AND FINDINGS

4.1. EVALUATION OF MITIGATION, STIPULATIONS, AND OTHER CONTROLS ENFORCEABLE BY THE AGENCY OR ANOTHER GOVERNMENT AGENCY

The proposed land application site and Operation and Maintenance (O&M) Plan will meet the requirements of the Montana Septage Disposal and Licensure Law, Air and Water Quality Acts, and other applicable Montana environmental laws and regulations, as well as county ordinances. Adherence to the regulations and the approved O&M Plan will mitigate the potential for harmful releases and impacts to human health and the environment by the proposed activity at the site.

4.2. FINDINGS

MEPA requires State agencies to conduct an environmental review when making decision or planning activities that may have a significant impact on the environment. MEPA and the administrative rules promulgated under MEPA define the process to be followed when conducting an environmental review. The Draft and Final EA that DEQ prepared in regard to T&D's application for approval of a new land application site complies with the procedural requirements of MEPA.

The Septage Disposal - Licensure Law (SDLL) recognizes that the health and welfare of Montana citizens is endangered by improperly operated and unregulated disposal of wastes. The SDLL and associated Administrative Rules regulate septic tank pumpers and land application sites to protect the public health and safety and to conserve natural resources whenever possible (Section 75-10-202, MCA). The basic objective of the land application site

approval is to establish a site for the on going disposal of septage that provides nutrients, moisture, and organic matter to soils that will enhance vegetative growth.

The site will be operated according to the SDLL and Administrative Rules for land application. The applicant will submit disposal records recording the dates and times of land application and incorporation and the general areas where septage is applied on the site. The site will also be inspected on a regular basis to verify compliance with the SDLL.

DEQ has determined that there are no significant impacts from this project that would require the preparation of an Environmental Impact Statement (EIS). Therefore, an EA is the appropriate level of environmental review and preparation of an EIS is not required. The impacts from the proposed activity at this site are not severe or geographically extensive. Issuance of the license would not set a precedent or commit DEQ to future actions with significant impacts. Operation of the site would not conflict with any local, state, or federal law, requirement, or formal plan.

5. OTHER GROUPS OR AGENCIES CONTACTED OR WHICH MAY HAVE OVER-LAPPING JURISDICTION

Jefferson County Environmental Health Department
United States Department of Agriculture
Montana Natural Heritage Program
Montana Department of Environmental Quality
Montana Historical Society State Historic Preservation Office
United States Geological Survey
Montana Bureau of Mines and Geology
US Fish & Wildlife Service
Montana Sage Grouse Habitat Conservation Program

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